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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,018	02/14/2002	Masatoshi Shiiki	NIT-323	5629

7590 07/29/2003
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EXAMINER

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 07/29/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,018

Applicant(s)

SHIIKI ET AL.

Examiner

Camie S Thompson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 7 is/are rejected.
- 7) ☒ Claim(s) 3 and 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1774

DETAILED ACTION

1. The abstract of the disclosure is objected to because the word "wherein" is misspelled.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over

MAY 07/04/03
Hohn et al., U.S. Patent Number ~~6,252,254~~ ^{6,066,861} in view of Duggal et al., U.S. Patent Number 6,515,314 and in further view of Gray et al., U.S. 5,985,173.

Hohn discloses an electroluminescent component that has a body that emits ultraviolet or blue light wherein the body comprises an inorganic luminous substance such as garnets doped with rare earths (i.e. $Y(Al,Ga)_5O_{12}:Ce^{+3}$). See abstract and column 4, lines 22-68). Hohn discloses that the inorganic luminous substance has an index of refraction at 1.84, which results in scattering affects that lead to good mixing of blue diode emissions (see column 3, lines 41-46). The reference also discloses that a plurality of luminous substance particles that emit different wavelengths, which can result in white light emission (see column 4, lines 42-68 and column 6, lines 34-68). Hohn does not disclose the instant phosphor composition formula. Duggal

Art Unit: 1774

discloses a light source with an inorganic phosphor that absorbs electromagnetic radiation emitted by an organic EL material in the UV to blue spectral region. The Duggal reference discloses a suitable phosphor as cerium-doped yttrium aluminum oxide (YAG) such as $(Y_{1-x-y}Gd_xCe_y)(Al_5Ga_z)O_{12}$ where $0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq z \leq 5$ as per the instant claims (see column 6, lines 9-31). It would have been obvious to one of ordinary skill in the art to use the phosphor presented in the Duggal reference because the material exhibits absorption of light in the wavelength range of 390 nm to about 530 nm in order to provide blue light emission. The reference does not disclose using a monovalent metal element as a dopant. The Gray reference teaches a phosphor that has an yttrium aluminum oxide (YAG) host and monovalent metal element such as copper as the dopant (see column 6, lines 10-29). The monovalent metal element provides a radiative transition of localized higher energy to lower level energy in order to populate the upper level of the host material in order to achieve green and blue emission as shown by the Gray reference in column 5, lines 19-36. None of the references disclose the content of d. This is an optimizable feature. The amount of dopant affects EM radiation. Discovery of optimum values of a result effective variable involves only routine skill in the art in re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Therefore, it would have been obvious to one of ordinary skill in the art to have a d value in the range of $0 < d \leq 1000$ wt-ppm in order to achieve greater luminescence efficiency. It is well known in the art to use a light-emitting device as a backlight for a liquid crystal display.

4. Claims 3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1774

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (703) 305-4488. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly, can be reached at (703) 308-0449. The fax phone numbers for the Group are (703) 872-9310 {before finals} and (703) 872-9311 {after finals}.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Marie R. Yamnitzky

MARIE YAMNITZKY
PRIMARY EXAMINER

1774